

WHAT IS CLAIMED IS:

1. A method of communicating information between a number of nodes connected to an IEEE 1394 serial bus, comprising the steps of:

 acquiring a value corresponding to the actual number of connections of the nodes connected to said bus; and

 establishing predetermined communication parameters as a function of said acquired value.
2. The method of claim 1 wherein said communication is isochronous communication over said IEEE 1394 serial bus having a predetermined cycle period, and further comprising the step of allocating a bandwidth in a cycle period as a function of said established predetermined communication parameters.
3. The method of claim 1 wherein each node has a unique node identification (node_ID) for communicating information, the node identifications increasing sequentially, with a root node exhibiting a node identification of the highest value; and wherein the actual number of connections of the nodes is represented by the node identification of said root node.
4. The method of claim 1 wherein the step of establishing predetermined communications parameters comprises calculating a propagation time as a function of said actual number of connections of said nodes, a length of a transmission path between nodes and a physical delay of a node; and calculating an arbitration time as a function of the calculated propagation time and time needed by a node to effect calculations.
5. The method of claim 1 wherein said communication is asynchronous communication over said IEEE 1394 serial bus wherein data packets are time division multiplexed as a function of said predetermined communication parameters.

6. The method of claim 5 wherein said time division multiplexing includes gaps between packets, said gaps having a duration based upon said actual number of connections of said nodes.

7. Apparatus for communicating information between a number of nodes connected to an IEEE 1394 serial bus, comprising:

means for acquiring a value corresponding to the actual number of connections of the nodes connected to said bus; and

means for establishing predetermined communication parameters as a function of said acquired value.

8. The apparatus of claim 7 wherein said communication is isochronous communication over said IEEE 1394 serial bus having a predetermined cycle period, and further comprising an isochronous resource manager for allocating a bandwidth in a cycle period as a function of said established predetermined communication parameters.

9. The apparatus of claim 7 wherein each node has a unique node identification (node_ID) for communicating information, the node identifications increasing sequentially, with a root node exhibiting a node identification of the highest value; and wherein the actual number of connections of the nodes is represented by the node identification of said root node.

10. The apparatus of claim 7 wherein said parameter establishing means calculates a propagation time as a function of said actual number of connections of said nodes, a length of a transmission path between nodes and a physical delay of a node; and calculates an arbitration time as a function of the calculated propagation time and time needed by a node to effect calculations.

11. The apparatus of claim 7 wherein said communication is asynchronous communication over said IEEE 1394 serial bus wherein data packets are time division multiplexed as a function of said predetermined communication parameters.

12. The apparatus of claim 11 wherein said time division multiplexing includes gaps between packets, said gaps having a duration based upon said actual number of connections of said nodes.